

Project Summary

The proposed project is located in the unincorporated community of Los Osos, a small coastal community of about 14,600 residents located at the south end of Morro Bay, twelve miles west of the City of San Luis Obispo. Los Osos was subdivided into small residential lots in the late 19th century, which were intended as summer homes. Over the years, the community developed in the absence of a central wastewater collection and treatment system, relying instead on individual septic tanks and leach fields. To complicate matters, Los Osos derives all of its drinking water from groundwater supplies. The community's drinking water system is comprised of a series of groundwater wells. The presence of septic tank systems and other sources of nitrates have compromised the water quality and quantity in the Morro Bay watershed. In an attempt to improve water quality and quantity the Los Osos Community Services District is preparing to construct a wastewater treatment facility, and require all residences within the prohibition zone to decommission their individual septic systems and connect to a central sewer collection system. The District will also construct and operate groundwater-harvesting improvements aimed at achieving a sustainable water supply for full community build-out without importing water.

The Los Osos Community Services District in conjunction with Cal Cities and S & T Mutual Water Company provide domestic water service to 100 percent of the population of Los Osos. The water agencies must plan water services to not only meet current demand, but to anticipate growth following the cessation of the building moratorium and installation of the wastewater treatment facility, and in future years to come. The total area of the District is 5.38 square miles. Its current population is 14,768, and the projected population at build out is 19,653.

A detailed Groundwater analysis prepared for the LOCSD Water Master Plan determined that the Los Osos Valley groundwater basin under existing conditions is estimated to have a yield of 3,500 acre-feet per year (AFY). It also indicated the safe urban purveyor yield of the basin, with the District's wastewater project, to be 2,860 AFY. Given that the demand to the basin is estimated at approximately 2,960 AFY, an additional source of water supply, and or water conservation, will be necessary for the community of Los Osos. The LOCSD's Urban Water Management Plan projects 200 AFY of water savings with implementation of community fixture replacement and water conservation programs.

The project is the establishment of the Los Osos Community Services District (LOCSD) operated community fixture replacement program. The emphasis of the program is to reduce indoor water use by applying Best Management Practices. The program will offer the homeowner an opportunity to replace their existing high flow fixtures with low flow fixtures at no cost to the homeowner. The district will cover the cost of the materials and the homeowner will be responsible for the cost of installation. The homeowner can either purchase a new toilet, faucets, and aerators, and submit the receipt to the District for reimbursement (up to a prescribed amount), or the District will provide them with a standard white toilet, along with a basic faucet and aerators. The District will track homeowners who participate in the fixture replacement program on a relational database, based on address and assessor parcel numbers with linking fields to the San Luis Obispo County Planning Department data base.

ApplicationNum	125	Specify from cho	
Application for (Specify from (k)	
Principle Applic	Los Osos Community Services District	Does Proposal in	<input type="checkbox"/>
Project Title	Community Fixture Replacement Program		
First Name-Aut	Bruce		
Last Name (AA)	Buel		
Title	Gen. Mgr.		
Street Address			
PO Box	6064		
City	Los Osos		
State	Ca		
Zip Code	93412		
Telephone Num	(805) 528-94		
Fax Number (Inc	(805) 528-9		
E-mail Address	BBUEL@LOSOSOSCSD.ORG		
First Name-Con	Hana		
Last Name-CP	Novak		
Contact-Title			
Contact-Street			
Contact-PO Box	6064		
Contact-City	Los Osos		
Contact-State	Ca		
Contact-Zip Cod	93412		
Contact-Phone	(805) 528-94		
Contact-Fax Nu	(805) 528-93		
Contact-E-Mail	HNOVAK@LOSOSOSCSD.ORG		
Funds Requeste	\$1,200,000.00		
Applicant Funds	\$609,818.00		
Total Project Co	\$1,809,818.00		
Estimated Total	\$360,000.00		
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Estimated Annu	200		
Estimated Total	1600		

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State-Wide	<div><input type="checkbox"/></div>
County-location	<div>San Luis Obispo</div>

Most recent Urb	12/31/2000
Type Applicant-	e) other-subdivision of st
DWR WUE Proje	
Project Focus	b) Urban
Project Type	a) Implementation of Ur
Quantifiable Ob	0

Those properties connecting to the wastewater treatment facility will be required to retrofit their homes as a condition of approval for sewer hook up. Once confirmation of fixture replacement has occurred, Water Conservation Certificates will be issued to the homeowner by the District, and logged on the computer as having met the condition. Homeowners will be required to have a Water Conservation Certificate upon hook up to the LOCSD's wastewater treatment facility. All properties within the prohibition zone will be tracked for compliance with penalties applied to those who are not in compliance.

The community fixture replacement program is one of the water conservation programs recommended in the Districts Water Master Plan June 2001 and in the Urban Water Management Plan December 2000, and is a requirement of a larger project, the Los Osos Wastewater Treatment Facility.

The goal is to retrofit roughly 4800 single- family residences within the community of Los Osos/Baywood. Implementation of the District's proposed project would reduce the projected need for delivery of SWP water supplies by up to 180,000 gallons per day or 200 acre feet acre-feet/year. In accordance with the LOCSD Urban Water Management Plan December 2000, the benefits from conservation is significant (about \$1,400,00 per acre foot) and would result in a direct savings of \$280,000 in imported water costs as a result of implementation of the community fixture replacement program. The ability of the community to avoid, over the long term, the need to import supplemental water will depend in part on the success and early implementation of conservation measures.

A. Scope of Work: Relevance and Importance

1. The purpose of the community fixture replacement program is to provide water conservation measures that are cost beneficial and that enhance the community's ability to manage its local resources in a self-sufficient manner. The program will better enable the District to live within its local water resources, reducing or deferring the need for imported water from the Bay-Delta, or any other imported source. The conservation program will reduce overall water demand and wastewater flows.

The community fixture replacement program will involve subsidized retrofit of plumbing fixtures prior to the connection of a structure to the District's wastewater system. The retrofit program includes replacing high water use toilets and showerheads with ultra low-flush toilets, and low-flow showerheads. Significant water savings can be anticipated from an average of 5-7 gpf for regular toilets, and from 3.5 gpf for low-water use toilets. The program will reduce water demands by 9 percent by 2010, and will reduce indoor consumption by 14.5 percent. The proposed project will result in water savings of 180,000 gallon per day, or roughly 200 acre-feet per year, at an imported water value of roughly \$280,000 per year. The plan will continue to save water indefinitely, so the benefits will continue even after the money on the program has been spent. It will also reduce wastewater flows by an estimated 150,000gpd.

2. Implementation of the District's proposed project would reduce the projected need for delivery of SWP water supplies by up to 180,000 gallons per day or 200-acre feet acre-feet/year. Because the District is located south of the Delta, this reduction in surface water deliveries will help meet three CALFED objectives:

Provide good water quality for all beneficial uses. Surface water that would otherwise be pumped for delivery south of the Delta could flow through the Delta, providing water quality benefits.

Improve and increase aquatic and terrestrial habitats and improve ecological functions in the Bay-Delta to support sustainable populations of diverse and valuable plant and animal species. The Delta water quality benefits provided by this reduction in pumping could improve aquatic and terrestrial habitats as well as decrease fish entrainment.

Reduce the mismatch between Bay-Delta water supplies and current and projected beneficial uses dependent on the Bay-Delta system. The projected decrease in the need for SWP water deliveries would provide the opportunity for that water to be used for other purposes.

In July 1989, the California Department of Water Resources (DWR) published a report entitled Geohydrology and Management of Los Osos Valley Groundwater Basin, San Luis Obispo County. The report attempted to estimate the safe yield of the groundwater basin, analyze whether seawater has intruded, evaluate management alternatives and determine whether the community will need to import water. Detailed Groundwater analysis determined that the Los Osos Valley groundwater basin under existing conditions is estimated to have a yield of 3,500 acre-feet per year (AFY). It also indicated the safe urban purveyor yield of the basin, with the District's wastewater project, to be 2,860 AFY. Given that the demand to the basin is estimated at approximately 2,960 AFY, an additional source of water supply, will be necessary for the community of Los Osos. Water conservation measures such as the fixture replacement program should adequately provide the additional sources of supply needed to avoid importing water.

Ground water production was estimated at 3,280 AFY for the year 2000. The basin yield has been exceeded in eight of the past fifteen years.

B. Scope of Work: Technical/Scientific Merit, Feasibility, Monitoring and Assessment

1. The project is the establishment of the Los Osos Community Services District (LOCSD) operated community fixture replacement program. The program will offer the homeowner an opportunity to replace their existing fixtures with low flow fixtures at no cost to the homeowner. The program is intended take place over a two-year period beginning in December 2002 and ending in December 2004. The district will cover the cost of the materials and the homeowner will be responsible for the cost of installation. The homeowner can either purchase a new toilet, faucets, and aerators, and submit the receipt to the District for reimbursement (up to a prescribed amount), or the District will provide them with a voucher from a plumbing supplier to obtain a standard white toilet, along with a basic faucet and aerators.

The homeowner can either install the devices themselves or hire a plumber to do it for them. The LOCSD will certify qualified licensed plumbing contractors who choose to participate in the retrofit program, and issue standard retrofit forms to those contractors. Certified plumbing contractors will fax to the District office a list of properties they plan on retrofitting the night before they do the actual work, and then follow up with a completed retrofit form certifying that all fixtures have been retrofitted. In the beginning of the program random field checks will be conducted by the water conservation coordinator to verify the accuracy of the information provided by the plumbing contractors.

The water conservation coordinator will be responsible for inputting the data from the retrofit forms into a visual fox pro database. Properties that have complied with the retrofit requirement will be signed off on the database, and a Water Conservation Certificate will be mailed to the homeowner. The database will track homeowners who participate in the fixture replacement program by address and assessor parcel numbers, with linking fields to the San Luis Obispo County Planning Department land use data base.

Every residence located within the prohibition zone is required to connect to the community wastewater treatment facility. Those properties connecting to the wastewater treatment facility will be required to retrofit their homes as a condition of approval for sewer hook up. Therefore, property owners must have a Water Conservation Certificate prior to connecting to the wastewater treatment facility.

The District will also provide a roll off box at Cold Canyon Landfill for disposal of recycled toilets. This will lessen the overall costs to the plumbing contractor and homeowner. LOCSD is pursuing the idea of having one main supplier located in Los Osos provide all of the toilets directly to the homeowner, and certified plumbers. The District will issue a voucher to the homeowner and plumber who will be able to redeem it at the supplier. That way the District does not have to be concerned about warehousing and distribution of toilets and fixtures, and is not involved in product liability concerns.

The District and the County of San Luis Obispo Planning and Building Department are working on an agreement to allow the District to administer building permits to Los Osos homeowners for installation of their sewer later hook ups. That way the District can keep track of those properties that have complied with the fixture replacement program and those that haven't on a relational database. The District will monitor and assess the progress and success of the fixture replacement program on an annual basis by evaluating the meter readings and water usage of its customers. The program is expected to go into affect in 2002 and continue until 2006. Customer water usage will be monitored throughout that time and for a number of years after the program is in place in order to determine the success of the program. Each homeowner within the District's Prohibition Zone is required to decommission their septic systems and hook up to the community wastewater treatment facility with severe penalties for those homeowners who do not comply.

2. Task List and Schedule

Tasks	Deliverables	Due Dates	Projected Cost
Coordinate the acquisition and distribution of replacement fixtures w/local supplier	RFB for pricing, then a signed contract with supplier along with vouchers	2002 – 2004	\$1,153,056
Data Base Management for tracking retrofitted parcels and for Water Conservation Certificates	Relational database with linking fields to County Planning Department	2002 – 2004	\$ 40,000
Prepare Fixture Replacement Ordinance	Fixture Replacement Ordinance	2002-2003	\$ 5,000
Initiate Plumbing Certification Program	Post notices and invite plumbers to submit S.O.Q.'s LOCSO to establish certification program	2002-2004	\$ 20,000
Distribute Retrofit Rebate Program forms and Fixture Replacement forms	Standardized forms	2002-2004	\$ 5,000
Set up an account with Cold Canyon Landfill for a roll off box for recycled toilets	Roll off box placed in District's yard	2002- 2004	\$ 120,000
Coordinate with the County Planning Dept. District's issuance of bldg. permits for installation of sewer laterals	Resolution by County Board of Supervisors authorizing the District to issue bldg. permits for sewer laterals	2002 – 2006	\$ 100,000
Management of inspectors and plumber certifications	Establishment of a certification program	2002-2004	\$ 200,000
Prepare and submit progress reports	Progress reports	Annually	\$ 20,000
Promotion of water conservation issues And public info.	Public information handouts and flyers	2002-2006	\$ 46,762
Administration, annual budget preparation	Annual budget	Annually	\$ 100,000

3. Monitoring and Assessment

Data necessary to forecast water savings include specific data on water use, demographics, market penetration, and unit water savings. Customer billing data will be analyzed to compare water usage prior to and after initiation of the retrofit program. Statistical data and spreadsheets will be developed to quantify water use patterns and illustrate the results numerically and graphically. The models will identify two baselines of water use; the average monthly use per account for the entire period of record, and the average of specific winter periods which represent indoor consumption.

C. Qualifications

1. Resume of LOCSD'S General Manager Bruce Buel attached as Exhibit A.
2. The County Planning and Building Department will collect fees and coordinate with the LOCSD on the permit process of individuals sewer lateral installation and ensure conditions of approval are met such as fixture replacement.

D. Benefits and Costs

1. Budget Breakdown and Justification

Task	Budget	Justification
a. Land Purchase	N/A	
b. Planning/Design/Engineering	\$215,000	
c. Materials/ Installation	\$5,000	
d. Structures		
e. Equipment Purchases	\$1,153,056	
f. Environmental Mitigation/ Enhancement	N/A	
g. Construction/Administration/ Overhead	\$426,762	
h. Project/Legal/ License Fees	\$5,000	
i. Contingency	\$5,000	
j. Other		

2. No cost sharing is proposed.

3. Benefit Summary and Breakdown

- a. The expected outcome of the community fixture replacement program will result in a 10 percent gcd water savings for toilet use and a 21 percent water savings for shower use. Lower consumption gained by water conservation will enhance the community's ability to serve its build-out population without importing additional water supplies and treatment facilities. The benefits from conservation are based on reduced pumping (energy costs), avoiding the cost of supplemental water, and reduced wastewater disposal costs.
- b. The fixture replacement program will directly contribute to CALFED goals by reducing the mismatch between Bay-Delta water supplies and current and projected beneficial uses dependent on the Bay-Delta system. The proposed program will reduce the need for Los Osos to import water from the Bay-Delta system.

4. Assessment of Costs and Benefits
 - a. In December 2000 the LOCSD adopted the Urban Water Management Plan. The Urban Water Management Plan evaluates existing water system and supplies, and recommends programs to meet the District's water source area for existing and future needs. The Community Fixture Replacement Program is one of the programs identified in the Plan. The Water Management Plan was prepared in accordance with the 1993 State Water Resources Control Board Water Conservation Guidelines (Appendix F of the State Revolving Fund Loan Program), and the California Water Code Sections 110631, 10632 and 10633. The scope of the Plan includes future population projections, and identification of water use characteristics of developed and undeveloped land areas for existing and future build-out of the service area; a review of historical production and consumption records to estimate existing average day, maximum day, and peak hour demands; project future basin water requirements, and evaluated the water supply and distribution system requirements to meet existing and future demands at average day, maximum day, and peak hour demands

In order to determine existing and future population of the LOCSD water service area, a detailed analysis of vacant properties was performed. Based on the survey, 470 additional units may be developed within the LOCSD water service area at build-out. Population within the LCOSD water services area is projected to increase 14.4 percent at build-out. CAL-Cities will see the most growth and development anticipating an increase in population of over 40 percent. The total population is expected to reach 19,692 at build-out, which is anticipated to occur around Year 2015.

Estimating the current basin yield was based on analytical and modeling methods. The safe yield of the ground water basin was estimated by using the hydrologic balance equation. The equation in its simplest form, is basin inflow- basin outflow = change in basin storage. If more water enters the ground water basin than exits the basin over a period of time, the storage water level in the basin will rise in proportion to the extra volume of water it is storing. Conversely, when more water leaves the basin than comes in, the average water level in the basin will drop. The approach used was to focus on what information is known and to adapt the hydrologic equation to fit the available information. The two most reliable and extensive data sets available include water levels and production.

The table below summarizes existing and future water production.

Water Purveyor	Existing Average Daily Production		Build-Out Average Daily Production	
	(mgd)	(AFY)	(mgd)	(AFY)
LOCSD	0.98	1,100	1.21	1,358
Cal Cities	0.92	1,030	1.29	1,452
S & T Mutual	0.14	150	0.14	150
Total Purveyor Production	2.04	2,280	2.64	2,960

The table below is a summary of future water demands.

Demand Condition	LOCSD Water System Demands	
	Existing (MGD)	Build-Out (MGD)
ADD	0.98	1.21
MDD	1.96	2.42
PHD	3.43 (2,382 gpm)	4.24 (2,946 gpm)
Notes:	1.Existing Demand based on historical records	
	2. Build-out demand based on 130 gpcd	
	3. MDD = ADD X 2.0	
	4. PHD = ADD X 3.5	

Water production data is based on actual purveyor use from 1994 through 1999, and is used to forecast future water demand.

- b. The Fixture Replacement Plan will have a benefit-cost ratio of roughly 2.88 to 1. This means that over 30 years, the community will benefit \$2.88 for every \$1 invested in conservation. Another way to look at this is the avoided cost, or savings, from not importing water. In 2010, for example, the Plan will be saving 180,000 gallons a day. This translates to nearly 200-acre feet of savings a year, at an imported water value of approximately \$280,000 per year. The Plan will also reduce disposal cost of up to \$80,000 per year. The Plan will continue saving water indefinitely, so the benefits will continue even after the money on the program has been spent.

d. **Benefit Cost Analysis Table- Comparison of Ground Water, Supplemental Water and Wastewater Disposal Costs**

Measures	Water Savings (mgd) ¹	Cost of Savings (\$/mg) ¹	Benefit Cost Ratios- Groundwater Total Community		Benefit Cost Ratio Assuming Supplemental Water	
			No add Disposal Cost	Additional Disposal Cost	No Add Disposal	Additional Disposal Costs
BMP 2 Res. Retrofit	0.0022	731.76	0.7	1.1	3.7	4.1
BMP 7 Public Info.	0.048	334.54	2.4	3.6	9.1	10.3
BMP 14a ULFT Replace-ment Rebate	0.066	1,273.97	0.2	0.8	2.0	2.6
BMP 14b ULFT Replace-ment Ordinance	0.066	12.79	22.1	83.6	194.3	255.9
Community Fixture Replace-Ment Program	0.104	845.01	0.5	1.3	3.1	4.1
Community Retrofit Ordinance	.086	9.20	28.8	109.1	253.4	333.7

Notes:

- 1) Averaged over 30 years
- 2) Supplemental Water of 1,400Acre Foot
- 3) Disposal Costs means and additional cost of wastewater disposal for the amount of \$1,469/mg on top of the \$270/mg operating and maintenance costs
- 4) ULFT: Ultra low flow toilets

E. Outreach, Community Involvement and Acceptance

The LOCSD and the water companies that serve the Los Osos area (Cal Cities Water Company, S & T Mutual Water Company) entered into a Groundwater Management Agreement in 1994. The terms of the agreement are that the water purveyors shall exercise good faith efforts in developing groundwater management strategies, which include water conservation. The existing MOU provides a basis for cooperation between water purveyors who have a vested interest in participating in the fixture replacement program.

The LOCSD and the County Planning and Building Department have met several times to discuss the idea of enabling the District to administer the fixture replacement program as a sub-component of the wastewater treatment facility. Forrest Wermuth Chief building inspector stated that he could see a way that the District could issue building permits for sewer lateral hook ups at the LOCSD headquarters so Los Osos residents wouldn't have to drive all the way to San Luis Obispo to pick up their permits.

The LOCSD has also met with Shirley Bianchi the San Luis Obispo County Board of Supervisor's to discuss the fixture replacement program and she is in support of the program. Her letter of support has been included in this application.

A key component to the fixture replacement program is the public information section. This would be an expansion of Cal Cities existing public information efforts. It will not only address specific measures, but also cultural/social aspects of establishing a water conservation ethic within the community. Most importantly, it will convey to the public an understanding of why water conservation is important. Programs include community gardens, utilizing recycled water, store front displays, theatrical productions by school children, poster contests, T-shirt design contests, presentations to employee and community groups, presentations and tours with hands-on demonstrations, radio and television ads, and printed educational material such as bill inserts. Water agencies will put water use from the previous year on customer water bills as a point of comparison. Public education will continue to be used to raise awareness of other conservation measures available to Water Agency customers.

Cal Cities and the City of San Luis Obispo have entered into a Statewide MOU regarding urban water conservation and Cal Cities has agreed to implement 14 "Best Management Practices". Two of Cal Cities BMP's deal with toilet replacement. Cal Cities has a vested interest in participating with the LOCSD to implement a fixture replacement program as an incentive to lower their overall costs.